

GCE



Revised GCE
Biology

Student Guidance

A2 Papers

For first teaching from September 2017



A2 Papers:

Length of exams and total marks awarded in A2 papers

The total length of and total marks awarded in each of the A2 papers is shown in the table below:

	Total length	Total marks
A21 Physiology, Co-ordination and Control, and Ecosystems	2 hours 15 mins	100 marks
A22 Biochemistry, Genetics and Evolutionary Trends	2 hours 15 mins	100 marks
A23 Practical Skills in Biology	1 hour 15 mins	60 marks

A2 Papers and Assessment Objectives

There are three assessment objectives that need to be assessed.

AO1 – demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures.

AO2 – apply knowledge and understanding of scientific ideas, processes, techniques and procedures:

- in a theoretical context;
- in a practical context;
- when handling qualitative data; and
- when handling quantitative data.

AO3 – analyse, interpret and evaluate scientific information, ideas and evidence to:

- make judgements and reach conclusions; and
- develop and refine practical design and procedures.

The balance of AOs in the three papers is as shown in the table below.

	Marks			
	AO1	AO2	AO3	Total
A21 Physiology, Co-ordination and Control, and Ecosystems	29-33	42-46	25-29	100
AS2 Biochemistry, Genetics and Evolutionary Trends	29-33	42-46	25-29	100
AS3 Practical Skills in Biology	19-26	19-26	16-22	60

How do examiners assess the three Assessment Objectives at A2?

AO1 (demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures)

- A variety of **question types** including table completion, completing a passage by inserting appropriate words in the blanks, definitions, describing practical techniques, labelling diagrams, essays involving recall of required knowledge;
- Typical **command terms** for AO1 include; define, label, describe, identify, name, state.

AO2 (apply knowledge and understanding of scientific ideas, processes, techniques and procedures)

- A variety of **question types** including comprehensions, calculations (including statistics at A2), interpreting photographs, drawing graphs and tables, identifying variables to be controlled in investigations, applying biological knowledge and understanding in unfamiliar contexts;
- Typical **command terms** for AO2 include; explain, suggest, draw, discuss, compare and contrast, calculate, distinguish between, summarise.

AO3 (analyse, interpret and evaluate scientific information, ideas and evidence)

- A variety of **question types** including comprehensions, the interpretation of tabular and / or graphical data, analysing non-familiar scientific investigations, identifying trends, summarising information, suggesting improvements to practical and other investigations.
- Typical **command terms** for AO3 include; comment on, compare and contrast, analyse, evaluate, give arguments for and against.

Differences between A2 and AS papers.

- The papers are longer with more marks.
- Statistics can be tested in A22 and / or A23 (but not at AS).
- A2 papers can include synoptic assessment, i.e. testing knowledge and understanding built up during AS and are more likely to include questions that bring together several parts of the course.
- The A2 assessment units provide opportunities for students to demonstrate higher order thinking skills by incorporating a wider range of question types and an increased incline of difficulty and less structuring than found in AS assessment units.
- A2 papers overall have a higher proportion of AO2 assessment (and less AO1) than AS papers (i.e. there is a greater emphasis on the testing of understanding and skills in unfamiliar contexts).

The structure of A2 papers

A21 and A22 – Six to nine structured questions (Section A) and an essay – question(s) requiring extended prose in which quality of written communication (QWC) will be assessed (Section B). The ‘essay’ can be set as one eighteen-mark question, or sub-divided as two nine-mark questions, or one twelve-mark question and one six-mark question, or more rarely, three six-mark questions.

A23 – Eight to ten structured questions. A23 may also assess the skills required in writing a short bibliography from information provided.

Other sources of information:

- The CCEA specification for GCE Biology – all students should be familiar with this document; the course content but also other guidance including, for example, Section 4.7: Mathematical skills
- Glossary of terms in ‘A’ level Biology
- Graphical techniques booklet
- Practical Guidance Booklet – Practical Skills in A2 Biology A23 (JN – need to check wording)
- Past papers and mark schemes
- Chief Examiner’s reports
- Commentaries on exemplar answers in past A2 papers
- Textbooks and Revision Guides linked to the specification
- CCEA E-books

At A2 it is important that students read beyond the specification where possible to increase their understanding of biology and the role of biology in society. This can be done through accessing a range of textbooks and other sources of information, e.g. keeping up to date with new developments as highlighted in the bbc.co.uk website health and science sections.